WHAT IS CLAIMED IS

1.   A retardation film having a birefringence, wherein

when a first biaxial index ellipsoid having primary refractive indexes nx, ny, and nz is assumed, where the primary refractive indexes nx, ny, and nz in X, Y and Z axis directions, respectively, satisfy a relationship of nx≠ny≠nz, X and Y axes being parallel to a film surface and a Z axis being normal to the film surface, the retardation film has primary refractive indexes nx', ny' and nz' of a biaxial index ellipsoid which is obtained by rotating the first biaxial ellipsoid at an arbitrary rotational angle θ1° about the X axis as an axis of rotation and at an arbitrary rotational angle θ2° about the Y axis as an axis of rotation.

2.   A process for producing the retardation film according to claim 1, comprising:

a step of forming a film from a photosensitive material; and

a step of irradiating the film with a light from a direction inclined with respect to the film surface with optional heating and cooling of the film.

3.   A retardation film having a birefringence, wherein

the birefringence bears a combination of a first index ellipsoid having primary refractive indexes nx, ny, nz in X,Y and Z axis directions, respectively, X and Y axes being set on the film surface and Z axis conforming a direction of the film thickness, where the primary refractive indexes nx, ny, and nz satisfy a relationship of nx>ny≥nz, and a second index ellipsoid, having primary refractive indexes nx',ny', nz', obtained by rotating the first index ellipsoid at an angle of θ3° about the Y axis as an axis of rotation and at an angle of θ4° about the Z axis as the axis of rotation, where the primary refractive indexes nx', ny', and nz' satisfy a relationship of nx'>ny'≥nz.

4.   A process for producing the retardation film according to claim 3, comprising:

a step of forming a film from a photosensitive material; and

a step of irradiating the film with a light from a direction inclined with respect to the film surface with optional heating and cooling of the film.

5.   The process for producing the retardation film according to claim 4, wherein the light irradiated from the direction inclined with respect to the film surface includes a perfectly polarized light component and a non-polarized light component and a direction of electric field oscillation of said perfectly polarized light component is non-parallel and non-orthogonal to a plane of incidence of the irradiated light.